

ABSTRACT

A method for determining an end point of a planarization process for removing metal from a surface of a substrate submerged in an electrolytic solution or slurry. A first electrode is provided which is operable to contact the surface of the substrate, such as a working electrode of a potentiostat system. A second electrode is provided which is operable to contact the electrolytic solution, such as a reference electrode of the potentiostat system. The first electrode is contacted to the surface of the substrate and an electrochemical property is measured, such as the electrochemical potential between the first and second electrodes, where the electrochemical property is indicative of an electrochemical characteristic of the substrate-slurry system. The planarization process is preferably stopped when a substantial change in the electrochemical potential of the system is measured. By measuring the electrochemical potential between the substrate and slurry using the first and second electrodes during the planarization process, the present invention provides an accurate indication of the time at which the metal is completely removed from the surface of the substrate. Thus, implementation of the invention substantially reduces the probability of removing too much or too little material during planarization.

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